A NEW SPECIES OF *LASIOLAENA* (ASTERACEAE: EUPATORIEAE: GYPTIDINAE) FROM BAHIA, BRAZIL

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ABSTRACT

Lasiolaena is an endemic genus of the Bahia state and previously included six described species. The most distinctive features of *Lasiolaena* are the spirally arranged leaves, the tomentum on the stems, leaves and involucres, and the flattened bristles of the pappus. The new species of *Lasiolaena* has a different suite of vegetative and floral characters from all the other known species. Leaves of **Lasiolaena lychnophorioides** are triangular, small (lamina 4–9 × 2–4 mm), with revolute margins, and sessile; the stems, lower leaf surface, and phyllaries are lanate; the conical receptacle is densely pilose and, finally, the pappus is formed by coarsely barbellate subulate bristles, and pinkish especially towards apex. The new species is described and illustrated and information concerning its habitat and phenology is presented.

Key Words: Asteraceae, Compositae, Brazil, *Lasiolaena*, Eupatorieae

RESUMEN

Lasiolaena es un género endémico del estado de Bahia que anteriormente incluía seis especies descriptas. Los caracteres más distintivos de *Lasiolaena* son las hojas dispuestas en forma espiralada, el tomento de los tallos, hojas e involucros y las cerdas del papus retorcidas. Una nueva especie de *Lasiolaena* tiene una morfología vegetativa y floral completamente diferente de todas las otras especies conocidas del género. Las hojas de **Lasiolaena lychnophorioides** son triangulares, pequeñas (lámina de 4–9 × 2–4 mm), revolutas y sésiles: los tallos, hojas y brácteas involucrales son lanosas; el receptáculo cónico es densamente piloso y, finalmente, el papus está formado por cerdas subuladas, notablemente barbeladas, rosado, especialmente hacia el ápice. La nueva especie es descripta e ilustrada y se presenta información relativa a su habitat y fenologia.

INTRODUCTION

Gyptidinae *s.l.* constitutes a complex and problematic subtribe and is, without doubt, polyphyletic (Hind & Robinson 2007). Basically it is characterized for the weakly distant phyllaries, persistent, the leaves opposite to spirally inserted, the capitula almost always with ten or more florets, and the pappus usually of many capillary or sometimes plumose bristles (King & Robinson 1972).

The greatest concentration of genera is in Brazil, especially in Northeast Brazil (Hind & Robinson 2007). Of the 29 genera and ca. 135 species in the subtribe, 24 genera have representatives in the Brazil, 20 are distributed in the State of Bahia, and nine genera are restricted to that state (King & Robinson 1987; Hind 1999a, 2000).

The genus *Lasiolaena* was established by King and Robinson (1972) in part of morphological and anatomical study that divided the artificial traditional concept of *Eupatorium* L. in 80 distinct genera. The most distinctive features of *Lasiolaena* are the spirally arranged leaves, the tomentum on the stems, leaves and involucres for which the genus is named, and the flattened bristles of the pappus. The conical receptacle of the genus was originally thought to indicate relationship to *Barrosoa* R.M. King & H. Rob. and *Conocliniopsis* R.M. King & H. Rob., but this character occurs widely among various groups of genera in the Gyptidinae

(King & Robinson 1972, 1987). Later, King and Robinson (1987) and Hind (1999a, 2000) discussed the closest relationships of *Lasiolaena* with *Agrianthus* Mart. ex DC., *Catolesia* D.J.N. Hind, *Stylotrichium* Mattf. and *Bahianthus* R.M. King & H. Rob, all of which have densely spirally inserted leaves, but lack the flattened bristles of the pappus.

Although *Lasiolaena* is a small genus endemic to the State of Bahia and where most of six species were described in the last 40 years, not all the species are adequately distinguished in the keys provided by Hind (1999b), and Oliveira (2006). The characters used as diagnostic, including the density of trichomes in the corolla lobes, lamina, cypselae, and the length of the pappus bristles are not adequately tested. Consequently, many newer specimens of *Lasiolaena* in herbaria are misdetermined.

Recently, we have collected a new species of *Lasiolaena* which has completely different vegetative and floral morphology from all the known species. Here we describe the new species and include comments about its habitat and phenology.

MATERIALS AND METHODS

The data presented are based on literature revisions and an analysis of *Lasiolaena* collections and types available in herbaria ALCB, CEPEC, HRB, MBM, R, RB, SP, SPF, UEFS and US. Morphological studies using Olympus SZH10 stereomicroscope were carried out on dried material.

TAXONOMIC TREATMENT

Lasiolaena lychnophorioides Roque, Ferreira & H. Rob., sp. nov. (**Fig. 1–2**). TYPE: BRAZIL: BAHIA: Município de Mucugê, Serra do Gobira, 13°5'S, 41°22'W, 16 Sep 2006, *A.A. Conceição, D. Cardoso & E.R. Souza 1878* (HOLOTYPE: HUEFS!; ISOTYPES: ALCB!, K).

Ab omnibus speciebus generis ceterus caule ramisque atque foliorum pagina abaxialibus atque bractis involucralibus lanosis, foliis coriaceis, discoloribus, triangularibus, laminis 6–9 × 2–4 mm, margine revolutis, sessilibus; receptaculo conico, dense piloso, setis pappi lanceolatis, barbellatis, acuminatis et roseis versus apicem differt.

Shrub 0.6 to 1.5m tall. Stems branched, pseudoverticillate, usually densely leafy in distal parts, densely white-lanate. **Leaves** alternate, spirally arranged, coriaceous, discolorous, lamina 4–9 × 2–4 mm, triangular, apex acute, margins revolute, entire, base truncate to cordate, sessile, adaxial surface dark-green, glabrous since younger, white-lanate abaxially and cryptically glandular-punctate, glandular trichome multicellular, 5–7-seriate, venation obscure beneath. **Inflorescence** terminal, corymbiform, distinctly exceeding upper stem leaves, 3–9 short-pedunculate capitula, peduncles 2–5(–7) mm long, densely lanate, 1–3-bracteolate, bracteoles 3–4 × 0.3 mm, linear, apex acute, abaxial surface lanate; **capitula** discoid, homogamous; involucre campanulate, 7–10 mm tall × 6.5–8.5 mm diam., phyllaries 24–36, 4–6 × 1–1.5 mm, oblong-lanceolate, apex acute, 3–4-seriate, distant, subequal, abaxial surface lanate; receptacle conical, epaleaceous, densely pilose. **Florets** 30–36 per capitulum, bisexual, ca. 7 mm long; corolla pinkish, tube 3.5–4.0 mm long × 1 mm diam., cylindrical, moderately glandular-punctate; lobes 0.5–0.8 × ca. 0.4 mm, triangular, acute, sparsely glandular-punctate, inner surface of lobes mamillose; apical anther-appendages conspicuous, ca. 0.3 mm long, oblong-ovate, rounded; bases of anther thecae rounded; anther-collar flattened and thickened; style ca. 5 mm long, style-base lacking basal node, glabrous; style-arms 2.5 mm long, slightly clavate, conspicuously short-papillose. **Cypselae** prismatic, 2–5 mm long, 5-ribbed, body setuliferous, setulae or long 'twin-hairs', scarcely forked at apices, apices acute; carpopodium annuliform, obscurely procurrent on to base of ribs; pappus-bristles 20–22, uniseriate, subequal, persistent, 2–3.5 mm long, lanceolate, laciniate at the base, apices barbellate, acuminate into a bristle-like point, pinkish especially towards tip.

Additional specimens examined. **BRAZIL. Bahia:** Município de Mucugê, subida para o Morro do Gobira, 1400 m, 11 Dec 2003, *N. Roque s.n.* (ALCB 64605, 64770); Morro do Gobira, 13°5'38"S, 41°22'31"W, 04 Aug 2004, *E.L. Borba, A.C.S. Pereira, P.L. Ribeiro & O.A. Oliveira 1805* (HUEFS, K); Morro do Gobira, 13°5'38"S 41°22'31"W, 04 Aug 2004, *E.L. Borba, A.C.S. Pereira, P.L. Ribeiro & O.A. Oliveira 1813* (HUEFS, K); Serra do Gobira, platô, 13°5'57"S, 41°22'34"W, 15 Aug 2005, *E.C.Oliveria & A.K.A. Santos 106* (ALCB, IBGE, HUEFS, K); subida Sul para a Serra do Gobira, 08 Sep 2007, *S.C.Ferreira, A.L.A. Côrtes, M. Ibrahim & S.N. Monteiro 343* (HUEFS).

Distribution.—evidently endemic to the Mun. Mucugê, Chapada Diamantina, Bahia.
Habitat.—sandy soils in campos rupestres, often in scrubby hillside vegetation.

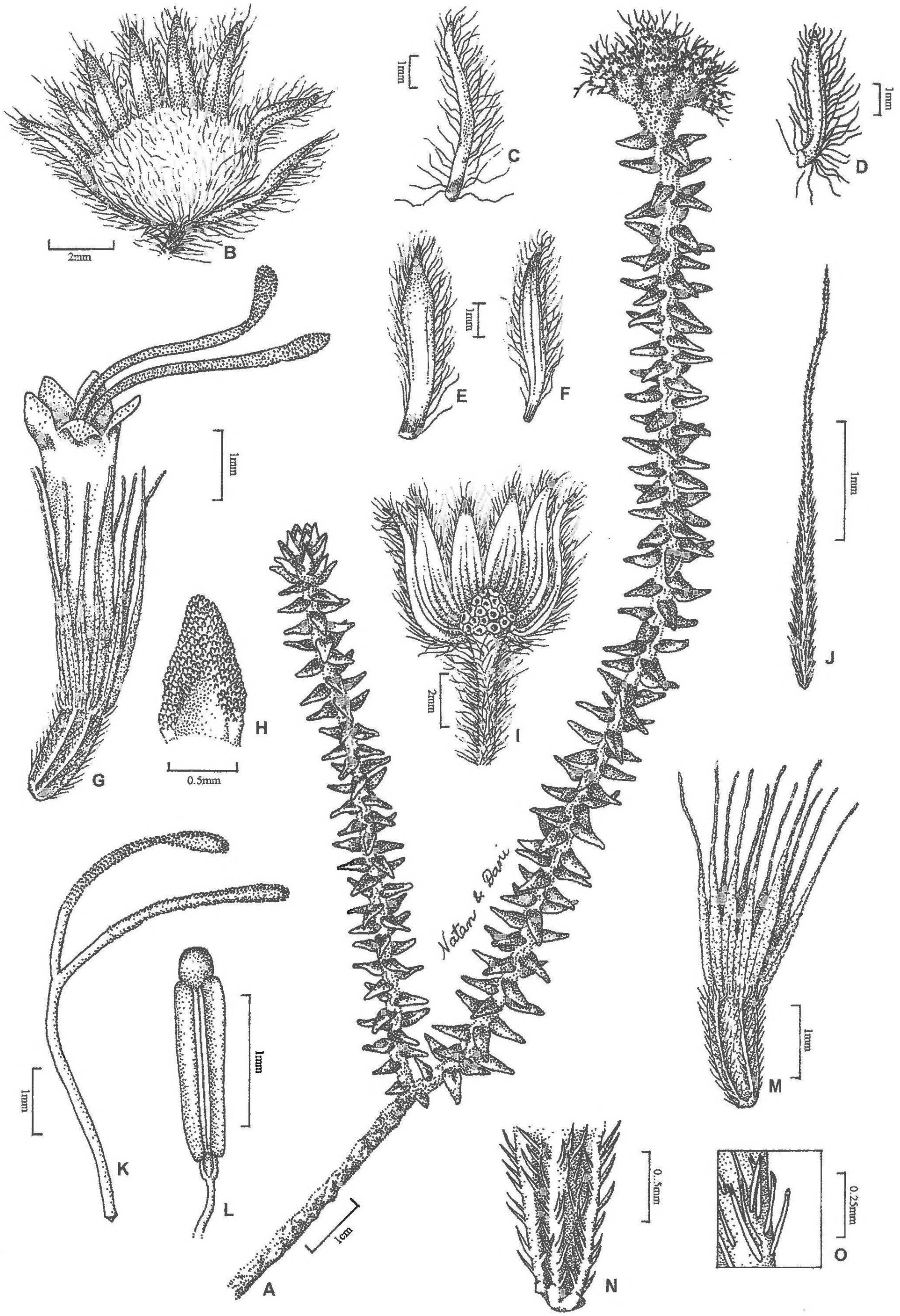

FIG. 1. *Lasiolaena lychnophorioides (Borba et al. 1813)*. **A.** Habit. **B.** Densely pilose receptacle. **C.** Bracteole. **D.** Outer phyllary. **E.** Median phyllary. **F.** Inner phyllary. **G.** Floret. **H.** Mamillose lobe. **I.** Conical and epaleaceous receptacle (removed indumentum). **J.** Barbellate, acuminate pappus-bristle. **K.** Style. **L.** Anther with rounded appendage. **M.** Cypsela and pappus. **N.** Carpopodium and 'twin-hairs'. **O.** 'Twin-hairs' in detail.

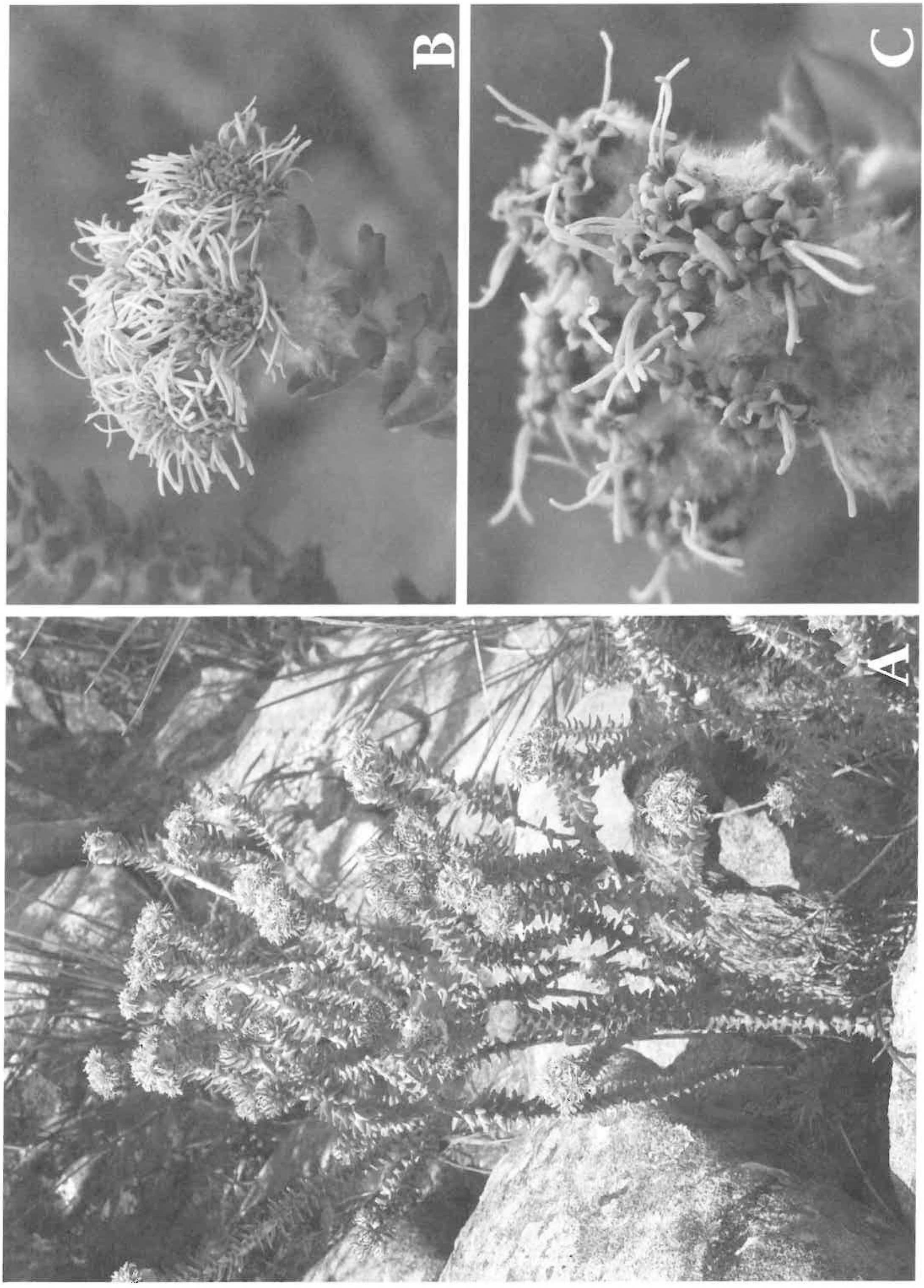

Fig. 2. *Lasiolaena lychnophorioides*. **A.** Shrub amongst rocks in campos rupestres vegetation. **B.** Inflorescence corymbiform on tips of leafy branches and leaves spirally arranged. **C.** Florets in details (phyllaries dense white tomentum). Pictures from Silvana C. Ferreira.

Phenology.—Flowering time: August–December.
Etymology.—The species is named for its similarity in habit to some *Lychnophora* species from Bahia.

DISCUSSION

Lasiolaena lychnophorioides has spirally arranged leaves, a character very common in a number of genera of the Gyptidinae. Some characters as persistent indumentum (stems, abaxial leaf face and involucre), corymbiform inflorescence, conical receptacle with trichomes (except *L. carvalhoi*) and pappus-bristles barbellate, acute to acuminate, have reinforced the generic position adopted by the authors. On the other hand, it has a set of distinctive morphological characters when compared with others species of *Lasiolaena*.

The leaves are coriaceous, discolorous, triangular, revolute and sessile. Revolute leaves are unknown in *Lasiolaena* and indeed in the Gyptidinae. This specific feature is very common in some species of *Lychnophora* (Vernonieae) from Bahia, as *Lychnophora phylicifolia*, *L. blanchetii*, *L. regis* and *L. triflora*, revealing how interesting are the convergent processes inside this family. Moreover, the stems, abaxial leaf surfaces and phyllaries of *Lasiolaena lychnophorioides* are white-lanate, and not tomentose or puberulous, as commonly observed in other species of the genus. The conical receptacle is densely pilose in the new species, what is unknown in *Lasiolaena* and rare in Gyptidinae. Finally, the pappus is formed by lanceolate, coarsely barbellate bristles, which are pinkish, especially towards their tips.

Lasiolaena is one of the most distinctive genera of the Gyptidinae in the campos rupestres of Bahia, and it occurs in small, geographically restricted populations. It is a prime candidate for studies on population genetics and morphology that may be useful in measuring the level of variability in the species and help establish conservation strategies.

A phylogenetic study based on molecular data including 24 genera of this subtribe is under progress at University of Feira de Santana, Brazil. Its main goal is to provide the first assessment of phylogenetic relationships among the Gyptidinae genera. Data from these results will help determine if Gyptidinae includes at least three distinct clades, each representing a separate subtribe, as suggested by Hind and Robinson (2007).

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